**UNITED STATES DEPARTMENT OF COMMERCE**
**National Oceanic and Atmospheric Administration**
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0108

October 5, 1999

Dave Reilly
Federal Highway Administration
The Equitable Center, Suite 100
530 Center St. NE
Salem, Oregon 97301

Re: Biological Opinion for the Sunnyside Interchange and Sunnybrook Extention

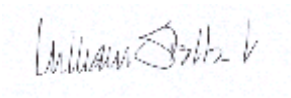
Dear Mr. Reilly:

The National Marine Fisheries Service (NMFS) has enclosed the Biological Opinion (Opinion) for the proposed project to modify the Sunnyside interchange at Interstate 205 and extend extending Sunnybrook Road east to increase traffic capacity at this location. This project is described in the Federal Highway Administration (FHWA) Biological Assessment (BA) submitted with the request for consultation in the FHWA letter of November 19, 1998.

This opinion considers the Lower Columbia River steelhead (*Oncorhynchus mykiss*), and Southwestern Washington/Columbia River cutthroat trout (*Oncorhynchus clarki clarki*) which occur in the proposed project area. Lower Columbia River steelhead were listed as threatened under the Endangered Species Act by NMFS on March 19, 1998 (63 FR 13347). Critical habitat was proposed for the Lower Columbia River steelhead on February 5, 1999 (64 FR 5740) and includes all river reaches accessible to listed steelhead in the Columbia River between the Willamette River and Hood River and the river reaches of the Willamette River and Columbia River downstream of the Willamette Falls. Critical habitat consists of the water, substrate, and adjacent riparian zone. Southwestern Washington/Columbia River cutthroat were proposed for listing as threatened under the ESA by NMFS on April 5, 1999 (64 FR 16397). Critical habitat has not been proposed for the Southwestern Washington/Columbia River cutthroat.

This Opinion constitutes formal consultation for the Lower Columbia River steelhead, and Southwestern Washington/Columbia River cutthroat trout. NMFS has determined that the proposed action is not likely to jeopardize the continued existence of these listed and proposed species. If you have any questions regarding this letter, please contact Jim Turner of the Oregon State Branch Office at (503) 231-6894.

Sincerely,



William Stelle, Jr.
Regional Administrator

cc: Bill Davis - Corps
John Marshall - USFWS
Greg Robart - ODFW
Tami Hubert - DSL
Tom Melville - DEQ

Endangered Species Act - Section 7
Consultation

# BIOLOGICAL OPINION

## Sunnyside Interchange and Sunnybrook Extension

at Mt. Scott Creek and Dean Creek

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: October 5, 1999

Refer to: OSB1998-0108

TABLE OF CONTENTS

# I. BACKGROUND

On November 19, 1989 the National Marine Fisheries Service (NMFS) received a Biological Assessment and request from Federal Highways Administration (FHWA) for Endangered Species Act (ESA) section 7 consultation for the Sunnyside Interchange and Sunnybrook extension project. The FHWA is the lead Federal agency. Oregon Department of Transportation (ODOT) is the designated federal representative and the point of contact with for this project. This project involves road construction actions within the Mt. Scott Creek watershed, part of the Lower Willamette River Basin. The NMFS reviewed the project as described in the Biological Assessment (BA) and determined that additional information was necessary to complete the consultation. The ODOT provided additional information through various meetings and presentations as summarized in their letters of March 10, March 12, and April 12, 1999. This included discussions of interdependent, interrelated, and cumulative effects, and additional details regarding restoration actions that would benefit and restore stream conditions and mitigate adverse effects. The NMFS determined that there was sufficient information to initiate consultation on April 12, 1999. This Biological and Conference Opinion (Opinion) is based on the information presented in the BA, supporting environmental and technical documents prepared in response to the National Environmental Policy Act (NEPA), and the above referenced information provided by ODOT.

The FHWA has determined that Lower Columbia River steelhead (*Oncorhynchus mykiss*), listed as threatened, may occur within the project action area. Since initiation of this consultation, the Southwestern Washington/Columbia River cutthroat trout *(Oncorhynchus clarki clarki)* have been proposed for listing. The FHWA, through ODOT, has requested that NMFS conference on the effects of this project to the cutthroat trout. The Lower Columbia River chinook salmon *(Oncorhynchus tshawytscha)*, listed as threatened, has been identified in the geographic area that includes the project, yet does not occur within the project action area.

This project has been determined to affect the indicated species. The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). FHWA determined that the proposed actions were likely to adversely affect the indicated species.

## A. Regional Transportation Needs

ODOT is working with Clackamas County to expand the Sunnyside Interchange and extend the Sunnybrook Street crossing at I-205, extending east to Sunnyside Road at 108th Avenue. This project is one of many integrated transportation projects within the Portland metropolitan area that are considered vital to meeting transportation demands for the future. This project has been identified within the *Metro Regional Transportation Plan* (RTP) and Clackamas County's *Sunnyside Area Transportation Master Plan*. The regional transportation planning process identified the need for additional east-west transportation capacity, connecting Interstate 205 (I-205) to points east. These

plans have considered both current need and future growth for the area. Metro, a regional government responsible for transportation and growth management within the Portland metropolitan area, has recently expanded the Urban Growth Boundary to include areas east of this project. Growth and transportation needs are expected to increase.

**B. Summary of the Consultation Process**

This Opinion reflects the results of the consultation process. This consultation process has involved evaluating alternatives to avoid or minimize adverse effects; considering the interrelationships and interdependence of this project with other actions; analyzing cumulative effects of this project; and assessing restoration actions to benefit stream conditions, as further described below.

The objective of this Opinion is to determine whether the action to expand the I-205 Sunnyside Interchange, realign 97th Avenue with a bridged crossing of Mt. Scott Creek, and extend Sunnybrook Street along Mt. Scott Creek is likely to jeopardize the continued existence of the indicated species or destroy or adversely modify proposed critical habitat.

1. Avoidance and minimization

The NMFS discussed alternatives to minimize adverse effects of the project and more effectively conserve the indicated fish species with FHWA, ODOT, and Clackamas County. A number of meetings were held.

The initial discussions focused on the need for the Sunnybrook extension and alternative locations for the road corridor other than along Mt. Scott Creek. ODOT and Clackamas County indicated that the options for increasing the east-west traffic capacity in the vicinity of the Sunnybrook extension project were constrained. ODOT and Clackamas County presented information indicating that adding capacity to existing roads was not practicable and would create other traffic and community related problems. Clackamas County considered optional corridors including Johnson Creek Boulevard. and Monterey Avenue to the north, and the Sunrise Corridor to the south. These options were discounted due to apparent constraints posed by existing infrastructure or natural features, or that it would not effectively meet the traffic demands. The Mt. Scott Creek stream corridor was selected based on available open space location, and proximity to I-205. The proposed alignment within the corridor was limited by Mt. Scott Creek on one side and Kaiser Hospital on the other. ODOT and Clackamas County felt that the current location and alignment of the Sunnybrook extension was appropriate and preferred. The proposed alignment provided for a 50 foot riparian buffer, which, ODOT identified as the preferred approach at the time when the National Environmental Policy Act (NEPA) review was initiated in the 1980's.

Additional discussions concerned the realignment of 97th Avenue. Shifting the alignment of the stream crossing at 97th Avenue would minimize the adverse effects to the riparian area at Mt. Scott Creek.

ODOT and Clackamas County indicated that the need to realign the 97th Avenue was based on safety and anticipated traffic flows off of I-205. Alternative alignments were evaluated and included disconnecting 97th Avenue from Sunnybrook, or maintaining the alignment at the present crossing at Mt. Scott Creek. ODOT and Clackamas County presented information indicating that there were no practicable alternatives to the proposed alignment of 97th Avenue (Memo from W&H Pacific to Clackamas County, February 25, 1999, and March 31, 1999.)

2. Interrelated and Interdependent Activities

NMFS discussed the relationship of this project with other transportation projects, located in the vicinity, with FHWA, ODOT, Clackamas County, and Metro. Metro has developed the RTP to help establish goals and anticipate transportation needs for the region. A number of meetings were held to consider the regional transportation planning process and to evaluate the extent to which the Sunnybrook project was interrelated and interdependent with the Sunnyside and Sunrise projects. Metro presented information to local, state and Federal agencies and other interested parties concerning the RTP process (Summary of Meeting of January 25, 1999). Metro explained that although the RTP was composed of numerous projects, these projects were not essential elements of the plan, but formed the basis for determining if regional transportation needs were being met. Each project is independent of the RTP and is intended to stand on their own. FHWA and ODOT provided additional and more specific details regarding the relationship of the Sunnybrook, Sunnyside and Sunrise projects (ODOT letter, March 10, 1999).

3. Cumulative Effects

The NMFS discussed expected future urban development within the Mt. Scott Creek Watershed with ODOT, Clackamas County and Metro. Metro has recently expanded the Urban Growth Boundary (UGB) to include additional areas within the Mr. Scott Creek watershed. Growth is expected within this area with increasing the amount of impermeable surfaces. Specific information regarding the amount of development or effects was not available (ODOT letter March 10, 1999). The NMFS used available information to define expected cumulative effects.

4. Restoration Actions

The NMFS discussed restoration actions intended to improve stream system conditions and mitigate adverse effects from the project with ODOT and Clackamas County. ODOT had proposed a number of actions, including planting riparian areas, placing instream structures, and improving fish passage within the immediate project area. The NMFS suggested that additional restoration actions be considered to ensure that the survival and recovery of the indicated fish species would not be impaired. Extensive negotiations that included Oregon Department of Fish and Wildlife (ODFW) and U.S. Fish and Wildlife Service (USFWS) led to a proposal from ODOT and Clackamas County to improve the fishway at Kellogg Creek Dam.

## II. PROPOSED ACTIONS

The FHWA, in coordination with ODOT and Clackamas County, have proposed to extend the I-205 Sunnyside Interchange, realign 97th Avenue constructing a new bridge at Mt. Scott Creek, and extend Sunnybrook Street across I-205 east to Sunnyside Road at 108th Avenue. The proposed work will occur over a number of years. The work will involve use of heavy equipment operated above, or alongside, Dean and Mt. Scott Creeks. (See BA, and the Sunnybrook Environmental Impact Statement (EIS) and associated supporting documents). Each of the specific project elements are described below.

Sunnyside/I-205 Interchange -- ODOT proposes to extend the Sunnyside Road interchange on I-205 and incorporate the Sunnybrook extension. This project element includes reconstructing the on-ramp and off-ramp for the Sunnyside Road, constructing the overpass that connects the freeway interchange to the Sunnybrook extension, and constructing auxiliary lanes on both side of I-205. This action will result in the overall widening of I-205 at the Mt. Scott Creek and Dean Creek crossings and will require extending the west end of I-205 culvert by 22 meters for a total length of 144 meters. The off ramp to the east will be bridged over Mt. Scott Creek, and will affect riparian vegetation and a number of mature trees. Approximately 10,000 $m^2$ riparian wetlands and the north channel of Dean Creek will be filled through this action.

Sunnybrook Extension -- ODOT and Clackamas County proposes to extend Sunnybrook Street to the east of I-205, intersecting Sunnyside Road near 108th Avenue. This project element involves the construction of a new five lane arterial road, with sidewalks and bike lane on the north side. The Sunnybrook extension will intersect with the realigned 97th Avenue and provide limited access to Sunnybrook and I-205. A new bridge crossing of Mt. Scott Creek will be constructed on 97th Avenue to the east of the current stream crossing. This will entail the construction of new bridge abutments, placing the bridge spans, and surfacing the road. The bridge span is approximately 20 meters. The bridge abutments will be placed within the Mt. Scott Creek flood plain. The Sunnybrook extension is parallel to Mt. Scott Creek and is within 50 meters of the creek. This project will result in the creation 1,200 meters of new road adding approximately 80,000 $m^2$ of impervious surface in the watershed and affecting approximately 400 $m^2$ of wetland. (BA, Final EIS, Reevaluation of Final EIS, March 1998).

Watershed and Stream Restoration -- ODOT and Clackamas County propose to restore stream habitat and system functions to offset the adverse effects from the road project. These restoration actions include removing the culvert at the I-205 crossing of Dean Creek; creating or enhancing 15,000 $m^2$ of wetlands within the Dean Creek and Mt. Scott Creek area; improving fish passage in the I-205 culvert at Mt. Scott Creek; planting approximately 20,000 $m^2$ of riparian areas along 1000 meters of Mt. Scott Creek with native trees and shrubs; opening of the culvert at the 97th Avenue. crossing of Mt. Scott Creek; placing 200 logs along 1000 meters of Mt. Scott Creek; and improving fish passage at Kellogg Creek Dam. (BA Appendix C and as modified in letters of March 12, 1999 and April 12, 1999).

The proposed actions have incorporated design alternatives and conservation measures to avoid and minimize effects. These include but are not limited to shortening the culvert extension for the Sunnyside/I-205 interchange by using retaining walls; shifting the alignment of the Sunnybrook extension to the north into the Kaiser property; using a bridge crossing for Mt. Scott Creek at 97th Avenue. and tributaries along Sunnybrook extension; incorporating vegetated retaining walls in the Sunnybrook extension to reduce the extent of the road base and minimize thermal impacts; and incorporating a storm water detention facility and compost storm water filters to treat all storm water from the Sunnybrook extension. (BA pp. 8-9, 19-20, and Appendix B).

The action area provides the geographic extent and basis for evaluating the effects of the proposal for this Opinion. The action area is defined by the direct and indirect effects of the proposed actions. The proposed actions will have a direct and long-term effect at each of the stream crossings due to short term construction activity, long-term loss of riparian area, and permanent presence of the road. The proposed action will have a beneficial upstream effect by improving fish passage and providing access to upstream rearing and spawning habitat. The proposed action will have a downstream effect through the discharge of sediment and other pollutants. For the purposes of this Opinion, the action area includes Mt. Scott Creek, from the headwaters to 100 meters downstream of the stream crossing, and Dean Creek from I-205 to 100 meters downstream.

## III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The listing status, biological information, critical habitat elements or potential critical habitat for the indicated species are described in references cited in Table 1.

Table 1. References to Federal Register Notices containing additional information concerning listing status, biological information, and critical habitat designations for listed and proposed species considered in this biological opinion.

| ***Species (Biological References)*** | ***Listing Status Reference*** | ***Critical Habitat Reference*** |
|---|---|---|
| Lower Columbia River steelhead (Busby et. al. 1995, Busby et. al. 1996) | The Lower Columbia River steelhead was listed as threatened under the ESA by NMFS on March 19, 1998 (63 FR 13347). | Critical habitat has been proposed for the Lower Columbia River steelhead on February 5, 1999 (64 FR 5740). |
| Southwestern Washington/Columbia River cutthroat trout (Johnson, et. al. 1999, Trotter 1989) | The Southwestern Washington/Columbia River cutthroat was proposed for listing as threatened under the ESA by NMFS on April 5, 1999 (64 FR 16397). | Critical habitat has not been proposed for the Southwestern Washington/ Columbia River cutthroat trout. |

The NMFS remains concerned over the low abundance and declining population of Lower Columbia River steelhead and Southwestern Washington/Columbia River cutthroat trout. Mt. Scott Creek has

low numbers of steelhead and cutthroat in part due to access barriers and habitat degradation. Essential stream systems features critical to the survival of the steelhead and cutthroat that may be affected by the project include water quality, water quantity, rearing habitat, and riparian areas.

## IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status. Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize the continued existence of the subject species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat, it must identify any reasonable and prudent measures that are available.

For the proposed action, NMFS's jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS's critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for adult and juvenile migration of the listed salmon under the existing environmental baseline.

### A. Biological Requirements and Status of Species

The first step in the method NMFS uses for applying the ESA standards of Section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends,

distribution and genetic diversity. To assess the current status of the listed species NMFS starts with the determinations made in its decision to list the particular species for ESA protection and also considers new data available that is relevant to those determinations (Table 1).

The relevant biological requirements are those necessary for the listed species to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stocks, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

The biological requirements for indicated species include stream conditions that allow unimpaired access to stream habitat; clean, cool water for spawning and rearing; streambed composed of gravels with low percentage of fine sediments; moderated flows that extend over winter and summer seasons; off-channel winter refuge areas; in-stream structure of boulders or large wood that will diversify flows regimes and create pool and riffle habitat for feeding and hiding; intact riparian area vegetated with trees and shrubs to provide shade and source of food; and sufficient numbers of returning spawning fish to sustain healthy populations.

The NMFS has determined that the Lower Columbia River steelhead are at low abundance. Of the many native stocks identified within the ESU, the majority of them are considered depressed. Habitat degradation has contributed to the decline. Blockage from dams and other barriers are of concern. Urbanization in the Portland and Vancouver area is of particular concern. Urbanization has been associated with general habitat degradation and changes of natural physical processes. Population trends are generally downward. The trend in the lower Willamette River, predominantly the Clackamas River, shows an improvement that is due to non-native stocks (Table 1.).

The NMFS has determined that the Southwestern Washington/Lower Columbia River anadromous cutthroat trout are at low abundance. The trends for out migrating anadromous cutthroat are declining, even though the freshwater form is considered in good shape. There is some indication that the freshwater form of cutthroat can produce smolts, yet there is no evidence that this is occurring to the extent necessary to offset the low numbers of anadromous forms. Habitat degradation including loss of riparian habitat and access remain of concern. (Table 1).

**B. Environmental Baseline**

The environmental baseline represents a basal set of conditions defined by the action area. The action area includes portions of Mt. Scott Creek and Dean Creek. Dean Creek can be characterized as a small, low gradient, incised stream. It is directly associated with wetlands east of I-205. The stream drains the wetland, flowing west through a 180 meter concrete culvert under I-205. The riparian area along Dean Creek is open or vegetated with various shrubs and deciduous trees. Recent fish surveys showed no apparent steelhead or cutthroat use during the summer. Mt. Scott Creek at I-205 can be

characterized as a medium small stream, with a moderate gradient, a small flood plain, within a well defined inner gorge. The riparian area is intermixed, forested and open grass lands. Current land use is primarily residential and commercial/industrial. Historic use included agriculture and forestry. General stream habitat includes various pools and glides, but is not very complex nor does it include large woody debris or instream structure. The stream channel is moderately constrained and contains potential spawning gravels. Fine sediments occur within the gravels, and stream bank erosion and down-cutting is evident within adjacent tributaries. The reach of Mt. Scott Creek within the action area is considered the best stream habitat within Mt. Scott Creek for spawning and rearing (ODFW 1998).

The baseline conditions for Dean Creek within the action area have been also affected by urban development. Industrial development and I-205 have previously disturbed Dean Creek. Dean Creek is a low gradient, headwater stream directly associated with an emergent wetland. The riparian areas along Dean Creek can vary from open grasslands to fully covered with trees and shrubs. The creek may be incised and channelized along various reaches. Within the action area, the creek tends to be constrained and exposed. Dean Creek does not currently support the indicated fish species covered under this Opinion. However, Dean Creek as a tributary to Mt. Scott Creek can affect conditions downstream that may affect steelhead and cutthroat trout. Functional conditions that are of concern are water quality and quantity as indicated by narrow or open riparian areas and channelized, entrenched creek beds.

The baseline conditions for Mt. Scott Creek within the action area have been impacted from the surrounding urban development. Development has directly encroached on the riparian area along Mt. Scott Creek. This has affected water quality, water quantity, temperature, stream bank stability, and input of organic/woody debris. The current stream crossing incorporates a concrete box culvert that impairs fish passage. Development within the watershed has reduced permeable surfaces and wetlands resulting in increased peak flows from storm water runoff and sediment and pollutants. Baseline conditions have been assessed using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) and is described in the BA. The BA indicates that baseline functional condition that are not being met or are at risk include temperature, sediment, fish passage, substrate, large wood, pools, off channel habitat, flows, and watershed conditions (BA, p. 16, Table 1.). Potential for restoration includes: moderation of flows, reduction of fine sediment input, re-establishment of riparian habitat, reconnecting the riparian corridor, re-establishment of in-stream structure, and improving fish passage.

Based on the best available information on the current status of the indicated fish species, the population status, trends, and genetics (as referenced in Table 1), and the poor environmental baseline conditions within the action areas, NMFS concludes that the biological requirements of the identified fish species within the action area are not currently being met. Improvement in habitat conditions is needed to meet the biological requirements for survival and recovery of these species. Actions that do not sufficiently improve conditions toward properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of anadromous salmonids

## V. ANALYSIS OF EFFECTS

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). This assessment method was designed for the purpose of providing adequate information for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect - restore, maintain, or degrade - on aquatic habitat factors in the project area. The NMFS agrees with the effects determination presented in the BA (BA , p. 16, Table 1.)

### A. Effects of Proposed Action

For each individual action covered in this Opinion, the effects on aquatic habitat factors and to species considered in this Opinion can be limited by utilizing construction methods and approaches that are intended to minimize impacts. The effects of the proposed project have been evaluated based on general minimization and avoidance measures (BA p. 14, Appendix B). Of particular importance is the timing of actions to the preferred in-water work period (established by Oregon Department of Fish and Wildlife); implementing erosion control measures; limiting disturbance of riparian area, stream bank and bed; maintaining fish passage during construction; and minimizing direct discharge of sediments or pollutants into the stream.

For the project actions described below, the NMFS expects that the effects of the proposed actions will tend to maintain or restore each of the functional elements contained in the effects matrix over the long term, greater than one year. In the short term, fine sediment and turbidity increases and minor interruptions and diversions of stream flow are expected. In the long term, increased habitat access, improved in-stream habitat, maintenance of riparian habitat, maintenance of flow regime, and maintenance of shading and temperature are expected. The potential effects from the sum total of proposed actions are expected to improve properly functioning stream conditions within the action area and improve properly functioning conditions or not further degrade the environmental baseline within the watershed.

1. Direct effects by Project Element

The effects of the project are considered by project element.

*a. Sunnyside and I-205 Interchange*

Extending and widening of the I-205 interchange in not expected to have a substantial direct effect on individual steelhead or cutthroat trout. The work will be conducted during a period of time where the listed fish are less likely to be present within the action area or are less vulnerable to project impacts.

Extending and widening of the I-205 interchange is expected to have minimal adverse effects on water quality, downstream flows, and stream habitat in Dean Creek. The construction of the I-205 interchange will result in the displacement of approximately 10,000 $m^2$ of wetlands and the in-filling of the north channel of Dean Creek. The loss of wetland habitat may affect water quality by reducing potential physical and chemical filtering, and may reduce water storage capacity. Storm water runoff from the new road surface will drain directly into Dean or Mt. Scott Creek and add to the potential for higher seasonal peak flows and channel erosion. Increases in turbidity and suspended fine sediments associated with wetland loss could affect salmonid rearing and spawning habitat. In-filling of the north channel of Dean Creek would result in the loss of stream habitat. Eliminating the north channel of Dean Creek, a ditched system, would be expected to improve the overall wetland hydrology by reducing wetland drainage and thereby increasing water storage capacity and water filtering capabilities.

To mitigate for wetland habitat loss from the construction of the interchange and to improve water quality and flood water storage, the I-205 culvert at Dean Creek will be removed and a wetland just west of I-205 and adjacent to Dean Creek will be enhanced. Removing the culvert at Dean Creek will open approximately 180 meters of the stream. The I-205 crossing of Dean Creek would bridge the creek. A natural stream channel bed would be established and Dean Creek would be able to meander within the newly established 40 meters wide corridor previously occupied by the culvert. This new riparian area would provide an opportunity for restoring or enhancing wetland habitat. Additional wetland restoration or enhancement would occur downstream. The effectiveness of the mitigation actions will depend on the ability of the newly constructed wetlands to capture and retain surface waters affected by the wetland loss. Based on available designs, it is likely that the mitigation action of removing the culvert at Dean Creek and enhancing wetlands west of I-205 would minimize any adverse effects to Dean Creek and associated wetlands.

Extending the I-205 culvert at Mt. Scott Creek is expected to have minimal long-term adverse effects. The culvert extension will result in the additional enclosure of stream channel. There will be a net loss of stream and riparian habitat and stream function. These habitat and functional elements help support the indicated fish species. Constrained streams exhibit hydraulic characteristics that can impair fish movement or contribute to adverse conditions downstream. Instream habitat elements would be eliminated at the culvert site. Riparian areas contribute food, shade and physical structure to the stream. The culvert extension would create a total culvert length at Mt. Scott Creek of approximately 144 meters. This culvert extension can exacerbate the effects of an already culverted stream, particularly affecting flows and fish passage. Long culverts may create substantial challenges for fish migration. The ODFW guidelines for culverts over 100 meters long indicates the need for natural stream bed, low gradients and sufficient in-culvert lighting. (ODFW 1997). It is understood that the I-205 culvert at Mt. Scott Creek does not meet fish passage standards established in Oregon by ODFW. It is expected that the culvert extension would result in a long-term adverse effect.

Recognizing that fish passage standards are not being met at the I-205 culvert at Mt. Scott Creek, and to otherwise lessen the effects from extending the culvert to the west, ODOT has proposed to modify

the existing culvert to improve fish passage. Fish passage for adults salmonids, upstream migration, and for juveniles, up and downstream migration, can be challenging. It is feasible to modify culverts by engineering structural elements within the culvert that will affect hydraulics and provide flow conditions, velocity and back currents that allow fish movement. ODOT has proposed a series of baffles and placement of cobble and boulders to create a natural bottom and modify in-pipe flows. Depending on the specific design and the maintenance of the culvert, effective fish passage would be expected.

Removal of the fish barrier at the I-205 culvert at Mt. Scott Creek would result in a positive long-term effect. Improved fish passage would provide access to upstream spawning and rearing habitat for the indicated fish species. The reach of Mt. Scott Creek just upstream of I-205 is some of the best quality stream habitat based on the conditions of the stream channel, the banks, and riparian area (ODFW 1998). Access would be provided to approximately 2000 meters of stream habitat up to Sunnyside Road, the next up stream fish migration impairment. Improved passage through I-205 can provide immediate and significant benefit, but will depend on the relative numbers of fish able to take advantage of the additional upstream habitat. Access can lead to increased spawning and rearing success and can increase numbers and health of individual fish and populations. Because of the low numbers of fish within the Mt. Scott system and additional constraints and barriers down stream, the actual benefit will be dependent on conditions downstream. Modifying the I-205 culvert at Mt. Scott Creek is expected to contribute to improving stream system conditions and benefit indicated fish species.

*b. Sunnybrook Extension*

The new road construction for the Sunnybrook extension is expected to have a long-term adverse effect to Mt. Scott Creek and the adjacent riparian areas. The alignment of the Sunnybrook extension runs parallel to Mt. Scott approximately 20 meters from the creek. This alignment runs along the top of the Mt. Scott Creek Valley along the upper edge of the hillslope on the north side of Mt. Scott Creek. The road base is aligned in such a way that portions of the new road are located downslope within the inner gorge. The new construction will displace approximately 30,000 $m^2$ of riparian habitat within the Mt. Scott Creek corridor. This will result in the loss of forested, shrub, and grass lands. Most of this site has been previously disturbed by logging, agriculture, and urban activities. There are some remnant intact mature trees. A loss of 200 medium to large trees is expected. The riparian area can affect stream conditions by providing certain functional, elements including shade, hillslope/bank stability, organic detritus input, water quality filtering, and large woody debris input. These elements are important for supporting the indicated fish species under this consultation. High quality riparian areas within urban settings are attributed with higher quality streams and benefits to fish (May 1997). The effects of the riparian area on stream function will vary depending on proximity of an action to the stream; physical characteristics of the site, such as steepness and orientation; and the age and

complexity of the system. The riparian area effected by the Sunnybrook extension would be expected to contribute more to water quality; surface water effects; organic mater to the stream system as food; hillslope/bank stability and erosion protection; and to a lesser extent contribute a shade effect. It is expected that this project will have a long-term adverse effect on Mt. Scott Creek and indicated fish species.

The new alignment of 97th Avenue will have an adverse long-term effect. The location of the stream crossing at Mt. Scott Creek will result in the loss of a mature stand of conifers. This site provides some of the best habitat complexity and contains some of the larger more mature conifer trees within this stream reach. In addition to the effect to riparian area, the realignment of 97th Avenue and construction of the bridge at Mt. Scott Creek is expected to have an adverse long-term effect to the stream. The 97th Avenue bridge at Mt. Scott Creek was designed to accommodate access to existing medical offices northwest of the 97th Avenue crossing. Although the bridge spans the Mt. Scott Creek channel, the bridge abutments are located within the floodplain of Mt. Scott Creek potentially limiting stream migration within the flood plain.

The additional road surface from the construction of the Sunnybrook extension and the realignment of 97th Avenue is expected to have a minimal long-term adverse effect to Mt. Scott Creek hydrology. Approximately 30,000 $m^2$ of new road surface and 50,000 $m^2$ of riparian area will be disturbed. Storm water runoff from this road and hard surfaces within the watershed can affect the water quality and water quantity within Mt. Scott Creek. The proposed project will result in an increase of impervious surface in the watershed and potential loss of wetland water storage function. This may result in an increase in storm water runoff entering Mt. Scott Creek. Higher storm water runoff can contribute to changes in seasonal flow patterns, including high winter flows and low summer flows. This may affect stream conditions, including increased stream bank erosion, availability of spawning and rearing habitat, and increased suspended sediments and chemical pollutants. The anticipated percentage increase of impermeable surface within the watershed is small, less than 5%. Due to the high level of existing development within the watershed -- approximately 60% or greater -- the small amount of increase of impervious surface may not be discernible within the stream system. The storm water from the road will be treated, and wetlands functions impacted from the proposed action will be mitigated to some degree. The change to water quantity and quality from Sunnybrook extension is expected to be minimal.

The new road construction is expected to have a minimal adverse effect to small wetlands and tributaries to Mt. Scott Creek. The new construction will cross or affect four small wetlands/streams. Two of the streams will be bridged to provide maximum opening and stream system function. This will provide a means to reduce the potential damming of up slope surface and ground water that might be caused by the road. Another stream will be relocated and partially channelized as Sunnybrook turns to

connect to Sunnyside Road. This could affect water quality and quantity. This stream has been adversely effected and shows evidence of down-cutting and bank erosion. ODOT and Clackamas County are proposing to enhance the upstream portion of this system that may improve the overall function of the stream downstream as it would affect Mt. Scott Creek directly.

To mitigate for adverse effects to riparian areas and streams, ODOT and Clackamas County have proposed to restore and enhance riparian areas, to open up the 97th Ave. culvert at Mt. Scott Creek, and construct a water detention facility within the Mt. Scott Creek watershed. Various sites upstream and downstream from the project site have been selected. The riparian areas to be enhanced are within 70 meters of Mt. Scott Creek and upstream tributary. Approximately 20,000 $m^2$ of riparian area will be enhanced by planting approximately 2,000 various native trees. Additional native shrubs will be planted. The current conditions of the restoration sites are varied but tend to be disturbed with intrusive, grass or shrub vegetation. One of the riparian areas that will be planted will also function as an upstream detention facility for storm water. As part of the realignment of 97th Avenue, the old road alignment would be removed, the existing culvert at Mt. Scott Creek would be opened and the portions of the old 97th Avenue would be planted in native trees and shrubs.

To improve rearing habitat and augment the loss of potential contribution of large wood from the riparian area, ODOT and Clackamas County have proposed to add large wood to Mt. Scott Creek. It is intended to use approximately 200 logs greater than .35 meters in diameter with root wads to create instream structure. There is a significant lack of large wood within Mt. Scott Creek. The proper location and method for placing the logs will be coordinated with NMFS and ODFW. Correctly placed within a stream, logs can provide physical space for fish to hide, modify stream hydrodynamics to recreate complex instream habitat, help stabilize streams, and may help control suspension of fine sediments.

The mitigation and restoration actions are expected to benefit stream system functions. The planting of native trees and shrubs will improve habitat conditions and complexity and provide long-term benefits to the stream. It would be expected that in the short term, riparian planting will help maintain or may improve hillside and stream bank stability, and erosion protection. In the long term, the riparian plantings will provide shade and contribute to organic matter within the stream system. A longer period of time (75+ years) would be needed before the planted trees would contribute to large woody debris input. The water detention facility would be expected to help reduce the adverse effects of high seasonal variation of flood flows. Opening the 97th Avenue culvert will provide for a more natural stream setting. Although the stream channel would remain constrained by the bottom of the culvert that would remain embedded, exposure to daylight and greater opportunity to reconnect to riparian area can improve rearing conditions for fish.

*c. Fish Passage Restoration.*

In addition to the proposed actions described above, ODOT and Clackamas county have committed to improve fish passage at Kellogg Creek Dam. Kellogg Creek Dam has been identified as a substantial fish barrier. The dam is located at the confluence of Kellogg Creek and the Willamette River. Mt. Scott Creek is a tributary to Kellogg Creek. A non-functioning fish ladder has been in place on this dam. Fish passage does occur during high water when the Willamette River backs up into the mouth of Kellogg Creek and floods the dam. It is recognized that stream habitat access is only as effective as the fish passage downstream. It is apparent that fish passage at Kellogg Creek Dam is sufficiently impaired that the potential benefits of instream actions at the project site would not be realized. To assure that the potential benefits of the restoration actions taken in Mt Scott Creek are realized, ODOT and Clackamas County have agreed to construct a new fishway at the mouth of Kellogg Creek.

For the purposes of this Opinion, NMFS anticipates that improvements to the fishway at the Kellogg Creek Dam will be practicable and effective in establishing fish passage and upstream habitat access. A separate consultation process will be conducted for modification or construction of a new fishway at Kellogg Creek Dam. Through this process, NMFS will evaluate proposed designs and consider alternatives to insure effective fish movement.

2. Indirect effects

Indirect effects are those effects that are caused by the intended action and are reasonably likely to occur. Those additional actions that may affect the indicated species and are due to the construction of the Sunnyside Interchange and Sunnybrook Extention are considered indirect effects. Roads provide access to areas and allow development. Urban development may have substantial adverse effects to streams and stream systems that would support indicated fish species being evaluated in this Opinion. Urban development that is enabled or caused by the Sunnyside Interchange and Sunnybrook Extension is an indirect effect of this project. ODOT has indicated that the Sunnyside Interchange and Sunnybrook Extension will not result in, or cause substantial difference in, urban development patterns.

The quantity and rate of urban development is in part based on access to buildable lands and demand for new residential or commercial buildings. The new Sunnyside Interchange and Sunnybrook extension is intended to meet existing traffic deficiencies, not facilitate future development. ODOT has indicated that urban development would not result from, or be caused by, this project (ODOT Letter of March 10, 1999). This is based on the current network of roads, including Sunnyside Road, which provide access to buildable lands. This position is demonstrated by the on-going development within the Sunnyside Road area and is the opinion of transportation planners familiar with traffic and growth in the Portland metropolitan area (presented during various coordination meetings discussing the Metro RTP process). The demand for new construction of residential and commercial development is clearly anticipated for the areas that are currently serviced by Sunnyside Road. Substantial efforts have been made to anticipate growth within the Portland area. Metro has developed a regional plan, the 2040

Plan, to help determine how to respond to this growth. It also helps to direct where the growth will occur. This area along the Sunnyside Road corridor and within the Mt. Scott Creek is designated for growth.

Although the development within the vicinity of this project would be expected with or without the extension, the actual rate of development may be affected by this project. The real demand for new housing will depend on need for housing (anticipated for this area) and by other factors including quality of transportation. Poor transportation can be a disincentive to live in an area. Alternative locations may be sought. Conversely, if transportation systems are improved, an area may become more attractive resulting in an increased rate of development.

The effects due to an increased rate of development are difficult to determine. The higher the rate of development, the shorter the time period before the full effect of the impact is realized. For long-term effects such as those associated with loss of permeable surface in the watershed, the ultimate outcome or effect will be the same, whether it is realized in a few years or in many. If delaying the full effect of development would provide an advantage for survival to any particular cohort, then the rate of development may be significant. Available information does not suggest that this is the case. Based on information provided by ODOT and consideration stated above, indirect effects of this project are considered minimal.

3. Summary of Direct and Indirect Effects by Stream and Watershed Function

Comparing the various adverse and beneficial effects for the proposed action, it is expected that conditions within the Mt. Scott Creek and Dean Creek system would be improved. In the short term, the adverse effects from construction, including increased discharge of sediment and disturbance within the stream, would be localized and minimized by the use of mitigation and restoration measures. Effects to habitat, stream channel, riparian areas, water quality and hydrology are summarized below.

*a. Watershed and Stream Habitat Effects*

Wetlands -- Filling wetlands and relocating the channel at Dean Creek would be similar in nature and scope to the restoration and enhancement of the stream and wetland associated with Dean Creek culvert removal. NMFS expects that water quality and quantity functions would be maintained or improved in Mt. Scott Creek.

Riparian areas -- New road construction would result in a net loss of riparian habitat area of Mt. Scott Creek. The size of the riparian area being proposed for restoration and enhancement is less than the riparian area directly impacted from the road. Although the proposed plantings would result in higher quality riparian habitat, the overall effects to the stream function will depend on various factors. In the short term, there will be a loss of large trees with an increase in the number and density of young trees and shrubs. These initial plantings will contribute to stabilizing side slopes within the riparian areas,

provide wildlife habitat, and help filter surface water flows. In the long term, the vegetation, particularly the trees, will become established and contribute to overall stream functions. Due to overall loss of habitat area augmented by general enhancement of riparian vegetation in the long run, NMFS expects conditions associated with riparian functions in Mt. Scott Creek to be maintained.

Instream habitat -- Instream placement of logs with root wads attached may improve stream function and conditions. NMFS expects that placement of instream log structures at the proposed reach along Mt. Scott Creek can improve stream habitat complexity and provide rearing habitat.

Fish passage -- Providing access to spawning and rearing habitat would substantially improve stream function and conditions. NMFS expects that modification of the I-205 culvert and anticipated improvement to fish passage at the Kellogg Creek Dam would provide a short-term and long-term benefits.

*b. Stream Channel Effect*

Stream channel -- Extending the I-205 culvert would result in the loss of stream channel and habitat. Opening the 97th Avenue culvert would enhance the stream functions including potential improvement to rearing habitat. NMFS expects that stream channel conditions would be maintained.

*c. Water Quality/Quantity*

Storm water -- Storm water runoff from Sunnybrook will be filtered and detained in an on-site pond. Surface water and ground water flows into Mt. Scott Creek would be maintained. Runoff from roads will be captured in storm water detention ponds and/or filtered before be discharged into Mt. Scott Creek. NMFS expects that stream water quality and water quantity conditions would be maintained.

**B. Effects of Interrelated and Interdependent Actions**

Interrelated and interdependent actions are those actions associated with the proposed action and either are part of a larger complete action or have no independent utility apart from the proposed action. The direct and indirect effects of the interrelated and interdependent actions are considered along with those of the proposed action. The interrelated and interdependent actions can be considered an integral part of the proposed action, such that if not for the proposed action the interrelated and interdependent actions would not exist. The proposed widening of Sunnyside Road may include interrelated and interdependent actions to the extent that this project is part of a larger road system, or where additional development actions are taken as necessary to support and augment the Sunnyside Road widening project.

The Sunnyside Interchange and Sunnybrook Extension has been evaluated for interrelated actions. This project is part of the larger road network designated in the Metro RTP. In the context of the RTP,

Sunnyside Interchange and the Sunnybrook Extension is one part of a larger road network. In further discussion with ODOT and Metro regarding the planning process, it became apparent that each transportation project was implemented as an independent separate action. The plan itself was not intended to be implemented as a whole, but only provide the guidance and the context for which each project can be identified, planned and implemented. Clearly, if not for the Sunnyside Interchange and Sunnybrook Extension, other transportation projects, elements of the RTP, would not exist in their same form (ODOT letter of March 10, 1999 and Metro meeting of January 1999). However, the ability to assess the specific aspects of the RTP that are the direct result of this project is limited. The implementation of any one of the plan elements does not obligate the construction of the other plan elements, and each project element within the plan is expected to stand on its own, with many of the road projects receiving separate ESA consultation. Based on the available information, the interrelated actions are expected to be minimal.

The Sunnyside Interchange and Sunnybrook Extension have been evaluated for interdependent actions. Consideration has been given to development that would occur to augment the project or that would not have value without the project. Construction of storm water detention facilities if required for this project could be considered an interdependent action. Access roads or construction of structures such as parking facilities that are required solely because of this project could be considered interdependent. For this project ODOT has indicated that road construction projects within the RTP are not interdependent. Although there are some references and implication to additional actions including changes of access points, construction of bicycle paths, and changes to land use and zoning, it is not apparent the extent to which these changes augment or would not have value without the project. Speculating as to the types of actions that may be consider as interdependent, few of those would have a significant effect. Based on the available information, the interdependent actions are expected to be minimal.

**C. Effects on Critical Habitat**

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for the indicated species includes the stream, bottom and water, and adjacent riparian zone within the defined geographic extent (as referenced Table 1.). For each of the proposed actions, NMFS expects that the effects of these actions will tend to maintain or restore properly functioning conditions in the watershed under current baseline conditions. The proposed actions will affect proposed critical habitat for steelhead. In the short term, the proposed actions will increase fine sediment discharged into Mt. Scott Creek. In the long term, the proposed actions will restore fish passage on Mt. Scott Creek and maintain or improve riparian habitat along Mt. Scott Creek. Habitat enhancement is expected to improve functional conditions within the riparian area and contribute to the proper stream functioning. NMFS does not expect that these actions will diminish the value of the habitat for survival of the indicated species.

## VI. CUMULATIVE EFFECTS

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions, including the ongoing operation of hydro power systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes.

Urban development within the watersheds of Mt. Scott Creek is likely to occur and increase the likelihood of take. Urban growth is managed in the Portland area through Metro. Metro establishes urban growth boundaries to accommodate and guide development. A long range plan, the 2040 Plan, has projected population growth within the Mt. Scott Creek watershed.

Urban development consisting of houses and commercial development is expected to increase hard impermeable surfaces to the landscape. These hard surfaces consisting of residential and commercial structures, roads, and parking lots will increase the amount of storm water runoff entering the streams. Urban development will continue to reduce current wetland areas and water storage capabilities in the watershed. It would be expected that sediment and chemical discharges into the streams will increase and the seasonal flow patterns will be altered.

The density and rate of development will vary by watershed. Mt. Scott Creek watershed will receive the greatest density of development in the short term. Based on available information, NMFS expects the existing development patterns around Mt. Scott Creek would continue. Through the assessment of aerial photography (Metro photo database September 20, 1997), it appears that development within Mt. Scott Creek would result in an impervious surface of 50% or greater. This would be an approximate increase of 100% in impervious surface from present conditions. This level of impervious surface has a high potential for degrading stream systems (May 1997). Urbanization has been considered one of the major factors of decline for steelhead (NMFS 1996).

Clackamas County and local governments are expected to implement storm water and floodplain management actions. Metro has developed standards under their urban growth management functional plan, Title 3, for protecting floodplains by establishing guidance for stream setbacks and buffers. Clackamas County requires storm water detention facilities with each new residential and commercial development. The county, through the Department of Water Environment Services (WES), has established certain surface water and erosion protection guidelines and reviews development plans for compliance. These action are expected to mitigate some of the adverse effects from future urban development.

## VII. CONCLUSION

NMFS has determined that, based on the available information, the proposed actions covered in this Opinion are not likely to jeopardize the continued existence of Lower Columbia River steelhead or the Southwestern Washington/Columbia River cutthroat trout or result in the destruction or adverse modification of proposed critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS considered the baseline conditions within the action areas and determined that conditions necessary to support the species are not being met. Cumulative effects will be significant and continue to adversely affect the stream conditions in the long-term. NMFS found that the project would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts and habitat displacement. NMFS found that minor long-term adverse effects to riparian areas would be offset by the long-term benefits of improving access to spawning and rearing habitat. Direct mortality from this project is not expected to occur.

The NMFS expects that the project will not appreciably reduce the likelihood of survival and recovery of the species. This is based on the low numbers of steelhead and cutthroat trout within the project areas that could be adversely effected in the short term and habitat access and improved spawning and rearing potential in the long term.

The NMFS expects that the project will not adversely modify proposed critical habitat. Impacts to the stream channel and riparian areas along Mt. Scott Creek and Dean Creek are not expected to appreciably reduce the functional capabilities of the stream to support the indicated fish species or reduce the likelihood of their survival or recovery.

## VIII. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information.

In additional to those general minimization and avoidance measures and proposed improvement to the fishway at the Kellogg Creek Dam described in the BA and subsequent documents, NMFS recommends the FHWA, ODOT and Clackamas County carefully consider all options to improve fish passage at the Kellogg Creek Dam. Reestablishing full connection between Kellogg Creek and the Willamette River would clearly provide the greatest benefit to the indicated fish species, both adult and juvenile. The NMFS recognizes that a separate study is being conducted by Clackamas County, Water Environment Service, which will, among other things, evaluate the feasibility of dam removal.

The NMFS expects that information gathered through this separate actions will provide the basis for future discussion between FHWA, ODOT, Clackamas County, ODFW, NMFS, and USFWS.

## IX. REINITIATION OF CONSULTATION

Consultation must be reinitiated if: The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; a new species is listed or critical habitat is designated that may be effected by the action (50 CFR 402.16).

## X. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.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NMFS. 1996. Factors for Decline, A Supplement to the Notice of Determination for West Cost Steelhead Under the Endangered Species Act. National Marine Fisheries Service, Protected Species Branch. Portland, Oregon.

May, C.W, E.B. Welch, R.R. Horner, J.R. Karr and B.W. Mar. 1997th. Qaulity Indices for Urbanization Effects in Puget Sound Lowland Streams. Washington State Department of Ecology, Publication No. 98-04.

ODFW 1997. Oregon Department of Fish and Wildlife Guidelines and Criteria for Stream-Road Crossings. ODFW, Portland, Or., October 1997.

ODFW 1998. Distribution of Fish and Crayfish and Measurement of Available Habitat in Streams of the North Clackamas Urban Area, Annual Report 1997th-1998. Oregon Department of Fish and Wildlife, Clackamas, Oregon

Trotter. 1989. Coastal cutthroat trout: A life history compendium. Trans. Am. Fish. Soc. 118:463-473.


## XI. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation

that results in death or injury to listed species by significantly impairing behavioral patters such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

**A. Amount or Extent of the Take**

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of Lower Columbia River steelhead because of detrimental effects from increased sediment levels and the potential for direct incidental take during in-water work. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take would occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take attributable to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. This take is specific to the temporary increase of turbidity, incidental discharge of sediment, temporary diversion or rechanneling of the stream during construction of the stream crossings, culvert placement and modifications, and construction of new roadway within the action area.

**B. Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species:

1. Fish passage at all stream crossings and throughout the action area shall be maintained to maximize fish access to upstream spawning and rearing habitat.
2. Storm water runoff from the road surface and road ditches shall be managed to reduce physical and chemical pollutants from entering the streams.
3. Erosion protection plans shall be developed and implemented for the project to reduce

sediment and chemical pollutant discharges into the streams.

4. Disturbed riparian areas and construction staging areas shall be restored or otherwise treated to reduce sediment discharge.
5. In-water work shall be isolated from the flowing water and/or conducted during selected time periods to reduce the potential of direct impacts to steelhead and cutthroat.
6. Placement of in-water habitat structures shall be consistent with and augment functional conditions within the stream.
7. Wetland mitigation and stream and watershed restoration shall effectively maintain or improve wetlands and stream function.

**C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary:

1a. All temporary instream flow diversions intended to isolate construction activities from active stream flow shall be constructed to meet ODFW fish passage standards, or where standards are not met, shall be constructed such that there is no further degradation of the current in-stream condition for fish migration.

1b. All construction debris materials shall be removed from the stream bed, banks and flood plains to minimize potential barriers to fish migration.

1c. All stream crossings shall meet the ODFW fish passage standards. Restored stream beds shall incorporate native stream bed materials or instream structures designed to collect stream bed material to establish and maintain fish passage in the long-term.

1d. Within the first year after completion of culvert modification, the culverts shall be inspected once during low water and once during high water and evaluated against objectives for fish passage relative to ODFW fish passage standards.

1e. Monitoring of the culvert modification at I-205 shall be conducted for three years following the completion of the work to ensure fish passage conditions. An annual report presenting the results of the monitoring and inspections at the modified culvert shall be submitted to the NMFS at the end of the calendar year. The report shall include sufficient detail to demonstrate consistency with ODFW fish passage standards, provide assessment of fish access and utilization of upstream habitat, and indicate any maintenance actions taken necessary to maintain fish passage.

2. All storm water runoff from the road surfaces and road ditches constructed as part of the subject project that directly enter the stream system shall be filtered, or otherwise treated, utilizing bioswales, constructed wetlands, detention basins, or equivalent methods to effectively reduce sediment and chemical pollutants.

3a. All construction debris shall be removed from the stream, floodplain, and riparian area as soon as practicable and not stockpiled. Temporary placement of material or debris within the

floodplain shall be covered or otherwise protected from erosion.

3b. All construction areas shall incorporate erosion protection measures, including silt barriers, silt fences, or equivalent protection approaches.

4. All disturbed stream banks, riparian areas, and staging areas shall be restored with native plant materials upon completion of the project.

5a. Construction of the stream crossings that would involve in-water work or affect stream flow, quality or quantity shall be done within ODFW in-water work period or as otherwise agreed to by ODFW and NMFS.

5b. Operation of heavy equipment and in-water demolition and construction activities shall be isolated from the actively flowing stream.

6a. Logs used for instream woody debris shall at a minimum be 35 cm in diameter and 10 meters long and have rootwads attached.

6b. Logs used for instream woody debris shall be placed instream as specifically guided by ODFW and NMFS.

6c. Monitoring of the instream log structures shall be conducted periodically during winter and summer flows for three years after completion of the work. An annual report shall be submitted to NMFS at the end of the calendar year describing results of the placement of the structure, identifying potential impairment to fish passage or stream function, and suggest appropriate modifications.

6d. Modifications to the instream log structures shall be conducted within three years after completion of the work and upon identification of potential problems to fish passage or stream functions and as directed by ODFW and NMFS.

7a. Monitoring of the wetland mitigation and riparian restoration and enhancement actions shall be conducted for three years after completion of the work and an annual report shall be submitted to NMFS at the end of the calendar year to assess the results of the action in maintaining hydrologic functions of water quality and moderating water flow in Dean and Mt. Scott Creeks and survival of planted vegetation that would affect stability of valley side slopes and stream banks.

7b. Modification of wetland mitigation and riparian restoration actions as appropriate and needed to maintain water quality, water retention, and riparian area functional conditions. shall occur within three years after completion of the work and as directed by NMFS and consistent with guidance or requirements of ODFW, Division of State Lands, and the Corps.

7c. Improvements to the fishway at the mouth of Kellogg Creek at the Kellogg Creek Dam shall be designed, reviewed by ODFW, USFWS, and NMFS, and actions initiated within 3 years of the conclusion of this consultation unless otherwise agreed to ODFW, USFWS, and NMFS.